AMENDMENTS TO THE CLAIMS

1. (Currently amended) An information recording medium comprising:

a substrate having a microscopic pattern, having a continuous shape of approximately parallel grooves formed with alternating groove and land sections;

a recording layer formed on the microscopic pattern;

a light transmission layer formed on the recording layer,

wherein the microscopic pattern is formed so as to satisfy a relation of $P < \lambda/NA$ and a thickness of the light transmission layer is within a range of 0.07 to 0.12 mm, wherein P is a pitch of the groove section or the land section, λ is a wavelength of reproducing light beam and NA is a numerical aperture of an objective lens; and

wherein the land section is wobbled in the radial direction and having a wobbled shape corresponding to a ~~recorded superimposed wave comprising a phase modulated wave and a single frequency wave, the single frequency wave being superimposed on the phase modulated wave and~~ signal to be recorded on the land section resulting from the modulation of a phase modulated wave that is further modulated by a single frequency wave, the single frequency wave having a frequency of integral multiples or one over integral multiples of a frequency of the phase modulated wave, and

wherein the frequency of the single frequency wave is different from that of the phase modulated wave.

2. (Previously Presented) The information recording medium in accordance with claim 1, wherein a record based on at least one of reflectivity difference and phase difference is performed onto either one of the groove and land sections.

3. (Original) The information recording medium in accordance with claim 1, wherein the wavelength λ is within a range of 350 to 450 nm and the numerical aperture NA is within a range of 0.75 to 0.9

4. (Previously Presented) The information recording medium in accordance with claim 2, wherein recording in accordance with at least one of the reflectivity difference and the phase difference is performed so that the modulated amplitude exceeds 0.4.

5. (Previously Presented) The information recording medium in accordance with claim 2, wherein recording in accordance with at least one of the reflectivity difference and the phase difference is performed so that the reflectivity exceeds 5 %.

6. (Original) The information recording medium in accordance with claim 1, wherein the recording layer is formed by a phase change material.

7. (Currently amended) A reproducing apparatus comprising:

a recording medium having

(a) a substrate having a microscopic pattern, having a continuous shape of approximately parallel grooves formed with alternating groove and land sections;

(b) a recording layer formed on the microscopic pattern;

(c) a light transmission layer formed on the recording layer;

wherein the microscopic pattern is formed so as to satisfy a relation of $P < \lambda/NA$ and a thickness of the light transmission layer is within a range of 0.07 to 0.12 mm, and wherein P is a pitch of the groove section or the land section, λ is a wavelength of reproducing light beam and NA is a numerical aperture of an objective lens; and

wherein the land section is wobbled in the radial direction and having a wobbled shape corresponding to a ~~recorded superimposed wave comprising a phase modulated wave and a single frequency wave, the single frequency wave being superimposed on the phase modulated wave and~~ signal to be recorded on the land section resulting from the modulation of a phase modulated wave that is further modulated by a single frequency wave, the single frequency wave having a frequency of integral multiples or one over integral multiples of a frequency of the phase modulated wave, and

wherein the frequency of the single frequency wave is different from that of the phase modulated wave;

the reproducing apparatus further including

(d) a pickup composed of a light emitting element having a wavelength of λ within a range of 350 to 450 nm and an objective lens having a numerical aperture of NA within a range of 0.75 to 0.9 for reading out reflected light from the information recording medium;

(e) a motor for rotating the information recording medium;

(f) servo means for controlling the drive of the pickup and the motor;

(g) a turntable for supporting the information recording medium while rotating;

(h) demodulator means for demodulating an information signal read out by the pickup;

(i) interface (I/F) means for transmitting a signal demodulated by the demodulator externally; and

(j) controlling means for controlling the entire reproducing apparatus.

8. (Previously Presented) The reproducing apparatus in accordance with claim 7, the reproducing apparatus further comprising an auxiliary information demodulator for demodulating a differential signal outputted from the pickup.

9. (Currently amended) A recording apparatus comprising:

a recording medium having

(a) a substrate having a microscopic pattern, having a continuous shape of approximately parallel grooves formed with alternating a-groove and a-land sections;

(b) a recording layer formed on the microscopic pattern;

(c) a light transmission layer formed on the recording layer:

wherein the microscopic pattern is formed so as to satisfy a relation of $P < \lambda/NA$ and a thickness of the light transmission layer is within a range of 0.07 to 0.12 mm, and

wherein P is a pitch of the groove section or the land section, λ is a wavelength of reproducing light beam and NA is a numerical aperture of an objective lens; and

wherein the land section is wobbled in the radial direction and having a wobbled shape corresponding to a ~~recorded superimposed wave comprising a phase modulated wave and a single frequency wave, the single frequency wave being superimposed on the phase modulated wave and~~ signal to be recorded on the land section resulting from the modulation of a phase modulated wave that is further modulated by a single frequency wave, the single frequency wave having a frequency of integral multiples or one over integral multiples of a frequency of the phase modulated wave, and

wherein the frequency of the single frequency wave is different from that of the phase modulated wave;

the recording apparatus further having

(d) a pickup composed of a light emitting element having a wavelength of λ within a range of 350 to 450 nm and an objective lens having a numerical aperture of NA within a range of 0.75 to 0.9 for reading out reflected light from and recording on the information recording medium;

(e) a motor for rotating the information recording medium;

(f) servo means for controlling the drive of the pickup and the motor;

(g) a turntable for supporting the information recording medium while rotating;

(h) interface (I/F) means for receiving the original information signal;

(i) modulator means for modulating the original information signal;

(j) waveform converter means for converting the original information signal into a format suitable for a recording characteristic of the recording layer of the information recording medium;

(k) auxiliary information demodulator means for demodulating a differential signal outputted from the pickup; and

(l) controlling means for controlling the entire recording apparatus.

Claims 10 - 15. (Cancelled)

16. (New) The information recording medium in accordance with claim 1, wherein the phase modulated wave has a frequency twice the frequency of the single frequency wave.